Testy Variana (ch 34)

3. Suppose that in Horsehead, Massachusetts, the cost of operating a lobster boat is $6,000 per month. Suppose that if x lobster boats operate in the bay, the total monthly revenue from lobster boats in the bay is $1,000(18x – x^2). If there are no restrictions on entry and new boats come into the bay until there is no profit to be made by a new entrant, then the number of boats who enter will be X1. If the number of boats that operate in the bay is regulated to maximize total profits, the number of boats in the bay will be X2.
a. X1 = 6 and X2 = 4.
b. X1 = 12 and X2 = 6.
c. X1 = 16 and X2 = 10.
d. X1 = 12 and X2 = 12.
e. None of the above.

11. In Problem 3, suppose Wilfred, a typical citizen, has the utility function U(m, d, h) = m + 13d – d^2 – 4h, where **d** is the number of hours per day that he spends driving around, **h** is the average number of hours per day spent driving around by other people in his home town, and **m** is the amount of money he has left to spend on other stuff besides gasoline and auto repairs. Gas and auto repairs cost $1 per hour of driving. If each citizen believes that their own driving will not affect the amount of driving done by others, they will all drive D1 hours per day. If all citizens drive to maximize the utility of a typical citizen, they will all drive D2 hours per day, where
a. D1 = 6 and D2 = 4.
b. D1 = D2 = 6.
c. D1 = 8 and D2 = 5.
d. D1 = 9 and D2 = 0.
e. D1 = 6 and D2 = 2.

22. A clothing store and a jeweler are located side by side in a shopping mall. If the clothing store spends C dollars on advertising and the jeweler spends J dollars on advertising, then the profits of the clothing store will be $(18 + J)C - C^2$ and the profits of the jeweler will be $(36 + C)J - 2J^2$. The clothing store gets to choose its amount of advertising first, knowing that the jeweler will find out how much the clothing store advertised before deciding how much to spend. The amount spent by the clothing store will be
a. 54.
b. 9.
c. 36.
d. 18.
e. 27.

32. Millie Bush has written a best-seller. Revenues net of production costs are $\$300T^{1/3}A^{1/3}$, where T is the number of publicity trips Millie takes and A is the number of ads for the book that appear. Millie has to pay for all of her own publicity trips, which cost \$100 each. Her publisher pays for the advertising, which costs \$100 per ad. Revenues from the book are split equally between Millie and her publisher. Let T_1 be the number of trips that Millie would choose to make in a Nash equilibrium where she chooses the number of trips and the publisher chooses the amount of advertising. Let T_2 be the number of trips that Millie should make if trips and advertising are determined so as to maximize total profits net of trip and ad costs.

a. $T_1 = 1$ and $T_2 = 1$.
b. $T_1 = 1$ and $T_2 = 2$.
c. $T_1 = 2$ and $T_2 = 1$.
d. $T_1 = 1$ and $T_2 = 1/8$.
e. $T_1 = 1/8$ and $T_2 = 1$.